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ABSTRACT

This study examines what makes cooperative arrangements between industry and Technical and Further Education (TAFE) in Australia successful. A literature review highlighted the importance of the provision of high quality technical education that meets the needs of the client. A range of innovative or entrepreneurial examples of industry/TAFE cooperative arrangements were identified. Five case studies were examined: establishment of the Textile and Fiber Research Institute within the Melbourne College of Textiles; Regency College of TAFE Hotel School program to provide training for QANTAS flight cabin crew; establishment of the Building Industry Management Education and Training Center; conduction of skills audits by the Fremantle College of TAFE; and development by Australian Cement/Mudgee TAFE of a course to introduce adult learners to apprenticeships. Success factors identified in industry/TAFE cooperation included the following: (1) TAFE must meet the needs of the client and respond quickly; (2) industry must clearly define the training issues, if necessary, with TAFE's assistance; (3) both parties must develop a mutually beneficial working relationship; (4) TAFE staff need to be pragmatic, practical, and prepared to take calculated risks; (5) TAFE managers must develop an appropriate organizational culture which fosters innovation and quality in the products or services delivered; (6) TAFE must make the necessary investment in human resources; and (7) the skills and capability of the college must be actively promoted to industry. (Thirty-one references and the questionnaire are appended.) (YLB)

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Case studies in industry/TAFE liaison: success factors

Tony Anderson

Adelaide 1992

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ABSTRACT

This study examines the question: what makes industry/TAFE co-operative arrangements successful? Written for a TAFE audience, the study reviews the literature on innovative or entrepreneurial examples of industry/TAFE co-operative arrangements. Five case studies are examined: the establishment of the Textile and Fibre Research Institute (Vic) within the Melbourne College of Textiles; the Regency College of TAFE Hotel School program to provide training for QANTAS flight cabin crew; the establishment of the Building Industry Management Education and Training Centre (NSW); the conduct of skills audits by the Fremantle College of TAFE (WA); and the development by Mudgee TAFE (NSW) of a course to introduce adult learners to apprenticeships'.

Success factors identified in industry/TAFE co-operation included the following:

- *TAFE must meet the needs of the client and respond quickly.*
- *Industry must clearly define the training issues - if necessary, with TAFE's assistance.*
- *Both parties must develop a mutually beneficial working relationship.*
- *TAFE staff need to be pragmatic, practical, and prepared to take calculated risks.*
- *TAFE managers must develop an appropriate organisational culture which fosters innovation and quality in the products or services delivered.*
- *TAFE must make the necessary investment in human resources.*
- *The skills and capability of the college must be actively promoted to industry.*

Successful development and implementation of training programs within the client organisation requires high-level negotiation skills, the ability to plan and manage projects efficiently and, in the case of complex projects, the ability to act effectively in an *Agent of Change* role within a firm.

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INTRODUCTION

With the publication in 1987 of *Skills for Australia*, the Commonwealth Government introduced fundamental changes into the vocational education and training system. These changes have profoundly altered the relationship between business/industry and the technical and further education (TAFE) system. The principal driving forces behind these changes were efforts:

- to make Australia more competitive internationally;
- to achieve micro-economic reform, particularly in the area of award restructuring; and
- to reduce cost pressures on government by securing other sources of funds for education and training, as well as to encourage business/industry to increase investment in human capital.

Some consequences of these changes and their likely impacts on TAFE were reviewed by Anderson (1990a), and include the following -

- Pressures exerted on firms to increase international competitiveness will be for higher productivity, better quality, better service levels, and better employer-worker relationships. In addition, enterprises will be required to redress skill shortages.
- Market forces and competitive pressures will force enterprises to reform workplaces and adopt new production processes in order to gain a competitive advantage in domestic markets. Following these reforms it is expected that a larger number of enterprises than at present will reach outward to export markets, especially Asia.
- As a result there will be increased use of integrated production systems which treat management, capital investment, workplace consultation and training as an integrated whole.
- A high proportion of expenditure on training will be carried by the enterprise; training demand in Australia will increase progressively due to award restructuring and a range of other factors; and there will be a widespread requirement for vocational training systems in Australia to expand their capacities and generally undergo changes in structure, flexibility, efficiency and responsiveness in order to meet community needs.

- There will be an increase in education and training provided:

  - in-house;
  - jointly by a group of enterprises or by an industry training body on behalf of members;
  - by TAFE teachers at industry training facilities;
  - by industry staff working in TAFE colleges (Hall, 1991, p.7); and
  - by use of TAFE facilities built on private industry property (mini TAFE colleges),

- The market for TAFE's commercial services will be directed to those enterprises which either individually or through industry groups desire TAFE training in generic skills applicable to a number of enterprises or enterprise-specific skills.

- TAFE will now be a competitor in the fee-for-service education and training market.

- There will be greater adoption of modular, competency-based courses and increased pressure to adopt self-paced learning.

- Increased pressure will be exerted on TAFE to adopt new forms of delivery (computer-based and computer-managed learning, use of multi-media courseware, satellites, video conferencing, etc).

In response, the national TAFE system has begun to pursue ways of establishing successful co-operative arrangements with industry either:

- to reduce the costs of providing training, for example, by sharing resources;

- to raise revenue by fee-for-service training provision, or sale or licensing of educational products;

- to provide other training related services such as 'skills audits' and training needs analyses which would then lead to the increased use of, or sale of TAFE courses; or

- to provide technical research and development for industry.

By 1991, the TAFE system had begun to demonstrate its innovative potential with a range of industry/TAFE co-operative arrangements. It became timely, therefore, to ask the question:

What makes industry/TAFE co-operative arrangements successful?

AIMS AND METHOD

Aims

Late in 1990 the TAFE National Centre for Research and Development, commissioned NSW TAFE to undertake a study for a target audience of mainly TAFE staff (college principals and teachers) but including industry heads and marketing staff, with the following aims:

1. Review the literature on TAFE/industry liaison.

2. Select five examples of industry/TAFE co-operative arrangements for case study.

3. Identify across the five case studies selected, the characteristics that have influenced their success, or otherwise.

4. Identify issues in the successful development and implementation of industry/TAFE co-operative arrangements and implications for the professional development of TAFE staff.

Method

A literature review was carried out and a range of innovative or entrepreneurial examples of industry/TAFE co-operative arrangements were identified. After consideration by the Project Steering Committee, five case studies were selected, as follows:

1. Textile and Fibre Research Institute (Vic)

The institute, located within the TAFE Melbourne College of Textiles (MCT), is a joint organisation set up by La Trobe University and MCT to carry out and foster textile and fibre research in Australia, designed to benefit the textiles, clothing and footwear (TCF) industries.

2. QANTAS/Regency College of TAFE Hotel School (SA)

The Regency College in South Australia won the contract to provide training for QANTAS flight cabin crew.

3. Building Industry Management Education and Training Centre (NSW)

The centre is a motel with training facilities incorporated, which is built on TAFE land. Its major training function is to provide building industry management courses.

4. Skills audits - Fremantle College of TAFE (WA)

A case study of 'skills audits' for two companies engaged in metal fabrication: Ocean Shipyards and Western Construction Limited.

5. Introduction to adult apprenticeships' - Mudgee TAFE (NSW).

This study describes the establishment of a course to introduce seven trades assistants to adult apprenticeships at the Australian Cement Company, Kandos, NSW.

The selection of the case studies was not made from an 'audit' of financial success, rather, the projects were selected as displaying a diverse range of responses to industry demands and as reflecting the national focus of the study.

Visits were made to each case study site to interview the key personnel associated with each project. The interviews loosely followed the questionnaire (Appendix A).

Arrangement of the report

The literature covering the experiences, reflections, and insights of people who have analysed aspects of the TAFE/industry relationship is given in the next section. The main findings across the case studies are presented in the section **Discussion and Conclusions** (page 29).

FINDINGS FROM OTHER STUDIES

The view of technical education development as a 'partnership'

A major theme in the literature surveyed is that the development of technical education is a joint responsibility: colleges and companies must work in a partnership to develop training where the focus is on quality and relevance (Hall 1988; Fell 1989; Mageean 1990).

The problem of identifying 'relevant' training

The identification of the skills and competencies needed to increase a firm's competitiveness on domestic or international markets is a difficult task. Bolton and Clyde (1989) argue that analysis of education and training needs must include anticipation of **emerging** needs related to what they term *key technologies*. These they define as 'newly emerging topics in science and engineering which are likely to have a major evolutionary effect on an existing product or process or may lead to a revolutionary new product or process'. The fact that a key technology often occurs 'at the boundaries' between existing areas of knowledge presents a problem as far as needs analysis and education/training are concerned. How can a training need be satisfied if the industry does not understand what are its training requirements?

The assessment of emerging skill requirements will take on greater importance as firms increase the rate of adoption of competitive strategies such as 'benchmarking for international best practice.' 'Best practice' represents the current competition or standard which products must surpass if they are to be successful on the international scene, or on the domestic scene replacing imports. Since the benchmark represents the quality standard to be achieved, it also implies an overall standard which training must achieve. The problem is that this standard is a moving target because competitors are actively working to improve their products. The attainment of educational quality can be likened to a race without a finish line!

The drive for increased competitiveness by firms, the 'export or perish imperative', implies that the worker of the mid-1990s - whom TAFE is training now - will have a broader role to perform than has traditionally been the case. Analysis of the nature of that role is outside the scope of this study; however, one view will be mentioned. According to Mehaut (1991, p.8) the competent worker of the future, in addition to possessing the necessary technical skills, will have team work skills and the knowledge and ability to cope with increased autonomy and responsibility for 'all tasks throughout a given production segment as well as for the internal organisation of their own work.' Additional competencies of the type indicated by Mehaut (1991) will be keenly sought by firms who are actively pushing to become more competitive.

The problem of how to anticipate the evolving needs of industry, highlights the importance of college staff monitoring developments at the industry level, keeping up-to-date with changing technology, and being able to assist industry, where necessary, with expertise in the analysis of training needs. The complexity of these activities suggests a need for pooling of resources between colleges, a concept which is the thrust of the 'Institutes of TAFE' being established by the NSW TAFE Commission (NSW TAFE Commission 1991).

Fostering innovation at the college level

Mageean (1990) highlighted the need for TAFE to be less reactive in its relationships with industry. The importance of establishing a management climate which fosters an entrepreneurial spirit was noted by Hall (1988), and the need to address the retarding effects of 'attitudes and tradition' was noted by Fell (1989). The institution of appropriate organisational structures to support effective, and efficient educational delivery at the college level was later to be taken up by the *Scott report* (NSW Education Portfolio 1990) which recommended that TAFE should actively pursue commercial, financial and other direct links with industry, including:

- joint ventures to develop skills[1];
- direct industry sponsorship of students and/or courses;
- training contracts for teachers to work in industry;
- lease/share arrangements for equipment and facilities;
- joint investment in facilities, equipment and property;
- commercial partnerships;
- 'barter arrangements';
- joint consultancy arrangements; and
- multi-company/TAFE training agreements.

The *Scott report* identified a number of factors influencing the level of co-operation between TAFE colleges and industry: the size of particular firms; the culture of co-operation that exists in a college; the ethos of the enterprise in which enhanced workplace skills and knowledge are to be developed; and the level of understanding of TAFE's services displayed by industry.

Specific initiatives at the college level which Bolton and Clyde (1989) identified as 'successful' were:

- the involvement of local companies in 'a circle of developments with the college at the hub';
- ability to develop a complete package of services;
- ability to implement programs quickly once the client gives approval;
- preparedness to set up collaborative projects involving a number of companies, and to be active in local education and training initiatives through membership on committees; and
- the adoption of quality assurance principles throughout the college with consequent attention to raising quality and lowering costs.

Mageean discussed a range of examples of successful TAFE-industry enterprises and although concluding that 'there is no single pattern or formula for success', she identified a number of

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[1] An example of a joint venture between education, industry and unions is given in the description of the 'College Arms Training Company' (Minister of Employment and TAFE South Australia 1989), which includes: company and management structure; statement of purpose; and use of profits and rent.

critical elements for successful TAFE/industry enterprise activities (1990, p.54). These included:

- the interaction should aim to produce practical outcomes;
- both parties should play an active role in, and accept, joint but flexible responsibility for the complete process of the enterprise from the initial research and preliminary analysis to the evaluation of the outcomes;
- both parties should respond positively, but not uncritically, to change and be willing to be innovative;
- each must respect the other's professional contribution: industry should receive a professional product, TAFE should be paid market rates for its services;
- TAFE must be willing to adapt to industry's needs, for example by providing courses at venues and times which suit the industry and developing modularised courses based on possible career paths; and
- colleges should maintain a diversity of industry networks.

From the TAFE college perspective, successful enterprise activities are said to 'enhance the college's standing in the community, increase the value of its awards and increase industry's willingness to work co-operatively with the college' (Mageean 1990, p.34). These findings are supported by the Frankston College of TAFE, Victoria, in a paper[2] which identified the crucial elements in an effective relationship between a TAFE college and industry to be:

- a clear commitment by the College to industry training;
- the establishment of clear lines of communication to encourage the articulation of identified training needs;
- the provision of a co-ordinated access to the services and expertise available within the college; and
- the development of responsive and flexible administrative structures and procedures by the college.

Some lessons from managing joint ventures

Drawing on experience in the establishment of joint venture companies, Smith (1987), concluded that joint ventures were only truly successful over an extended period of time when structured in a fashion that was beneficial to both partners, the risks and hazards were shared equitably, the responsibilities were carefully allocated between both partners, and the capital required was

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[2] *Working Successfully with Industry: The BHP Experience* which describes how the College worked closely with BHP Sheet and Coil Products Division on a fee-for-service basis to assist them in implementing an Employee Development Program.

calculated properly.

Anderson (1990b) reported issues in the management of a 'leading-edge' project - the application of artificial intelligence programming techniques in the development of computer-based tutoring systems to teach diagnostic skills, a joint project in partnership with the Digital Equipment Corporation. The following factors were emphasised as important in the development of innovative projects.

1. Use of the technique of constructing a visual representation of how the tutoring system would function in delivering benefits to the learner. This 'goal-vision' was then used in two ways: (a) as a device to aid identification of potential problems in the project adoption and early implementation phases and, importantly, (b) as a communication device to inform the various project stakeholders of the nature and complexity of the project and the degree of commitment necessary for its successful completion.

2. Publishing, at the outset, the criteria which will be used to evaluate the project so that these may be understood from the beginning of the project. Here, the evaluation criteria serve double duty since they constitute a statement of the quality standard to be achieved, as well as the measures by which quality will be assessed.

3. Having a project sponsor or 'champion' at senior executive level in the organisation.

4. Specifying, at the outset, the various ownership issues including intellectual property rights.

5. Setting 'milestones' to be achieved during the development process.

'Success factors' in industry-TAFE collaboration projects were examined in September 1991, in relation to eleven innovative projects sponsored by the Employment and Skills Formation Council.[3] These included the following:

- Ensure that adequate time is allowed to develop the specification of the scope and objectives of the project, including allowance for the necessary consultation processes to secure agreement of both parties (including gaining the support of the appropriate industry association or community group).

- Use appropriate means to test the feasibility of the project's scope and objectives.

- Have a clear understanding of the 'ownership' issues associated with the project.

- Specify the process to be used to achieve the project outcomes.

- Where a steering committee is to be used, define its role at the outset (is it to steer, to advise, to manage the 'start-up' phase then withdraw, or is it to have a continuing involvement?)

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[3] Part of the National Board of Education, Employment and Training (NBEET).

- Select a team which is able to be dedicated to the project from the beginning but make sure you have the 'right people in the right place, at the right time'.

- Avoid a situation where there are too many managers.

- Tighten-up the financial side of the venture, attending to issues of intellectual property rights, and contingency funding.

- For ground-breaking projects allow some flexibility for renegotiation, for example, to change the objectives after the achievable goals have been identified.

- Set quality standards for both the process and the outcomes.

- Set project 'milestones' to be achieved along the way to the final goals.

- Establish and maintain close and on-going collaboration throughout the project.

Gallagher (1987) also addressed management issues concerning the use of equipment in TAFE/industry collaborative projects. Points of concern were:

- costs - reaching a satisfactory agreement between parties can be dependent on taxation incentives and the legal implications over the use of equipment;

- legal implications, for example, indemnity and the question of profit/loss sharing when equipment is jointly owned;

- the matter of tax incentives;

- course objectives - extent to which sharing/purchasing equipment will assist in meeting course objectives;

- industry commitment to training;

- union policies; and

- local circumstances, for example, geographic location, local commercial/industry links mean that some colleges are in a better position to take advantage of equipment sharing with industry.

The generally complex nature of the management of innovative industry/TAFE collaborative projects suggests that there is a need for development of guidelines for the effective management of these projects.

Barriers to successful liaison

Mageean (1990, p.23) identified barriers to successful liaison as:

- lack of confidence by some TAFE staff in their ability to assist industry and the disparate

nature of industry both of which posed difficulties in bringing together groups with a common interest;

- bureaucratic intrusion and delays in responding to industry needs;
- cumbersome accreditation processes; and
- lack of funding needed to allow the release of TAFE lecturers to industry

Sheldrake (1988) also identified a number of barriers to effective liaison:

- industry's lack of awareness of the full range of vocational education options of TAFE;
- 'misplaced' focus of TAFE, for example, long delays in courses gaining accreditation; lengthy debates over nomenclature of courses;
- industry unsure of whom to contact in TAFE, especially where no personal network existed;
- perceived lack of availability of TAFE staff;
- industry favouring one college above another;
- lack of articulation/recognition/comparability of TAFE courses between colleges;
- lack of training and poor attitudes amongst TAFE staff toward liaison;
- lack of knowledge of industry - its complexity, structure and internal conflicts, for example, the key players, industry advisory body representatives; and
- introduction of charges for services, TAFE losing 'barter' advantages gained over the years.

A comprehensive study of industry liaison activities at Wetherill Park College of TAFE, NSW identified several additional factors perceived by TAFE college staff to be barriers in industry/TAFE liaison (Bagshaw 1990a). These factors are broadly grouped into three categories:

1. Identifying Need and Creating Demand

TAFE does not have an image as a technology leader nor have accurate knowledge of the actual level of technology required by local firms. Training is generally not seen as a high priority by small firms. Some employers do not have much time to liaise with TAFE or do not see TAFE as an appropriate and cost-effective training provider. Action to correct these deficiencies includes: improving the expertise of TAFE staff in relation to equipment used in industry; having an adequate database of local industry; having adequate funding for promotion; and improving the quality of the information contained in the handbook of TAFE courses.

2. Product Delivery

Improvements could be made in delivery of educational products by streamlining college procedures relating to equipment purchase or hire, and establishing joint ventures. There is also a need to seek a balance in resource allocation for customised courses for industry, and for the provision of mainstream courses.

3. Quality Control/Evaluation

It is essential to have appropriate quality control procedures in place. These should include:

- feedback mechanisms covering students, employers, TAFE teachers and administrators;
- student assessment schemes and associated accreditation and articulation arrangements;
- the annual identification of college and section objectives; and
- the efficient use of project management techniques.

Four factors contributing to unsuccessful TAFE/industry co-operative projects identified in the *Scott report* were: lack of skills, lack of training of TAFE staff, lack of continuing commitment by the industrial partner, and lack of software development (1990, p.70).

The literature relating to both successful and unsuccessful joint ventures would be incomplete without a brief examination of what the marketing experts say about successful marketing.

The marketing of education: What can the marketing experts tell us?

Marketing experts claim that products can be divided into 'goods' and 'services'. Education is classified as a 'service' and some of the distinguishing features of a 'service', according to Kapp (1989) are:

> *Intangibility*. Services are intangible, that is, they can't be held, touched or seen before the purchase decision.
>
> *Inconsistency*. The quality of the service is often inconsistent.
>
> *Inseparability*. In most cases the consumer cannot (and does not) separate the service from the deliverer of the service, or the setting in which the service occurs.

Kapp's three distinguishing features point to the importance of trust: the buyer or 'consumer' is required to believe that the product will be good, and this, in turn, points to the importance of the credibility of the supplier.

According to Kotler (1991), successful companies are those that satisfy their customers. He believes 'that if you can't bring something special to a market, you don't belong in it. The winners are those who carefully analyse needs, identify opportunities, and create value-rich offers for target customer groups that competitors can't match'. Kotler describes five competing concepts and their dangers under which organisations conduct their marketing activity (1991, p.13-28):

1. *The Production Concept* - which holds that consumers will favour those products that are widely available and low in cost. Managers of production-oriented organisations concentrate on achieving high production efficiency with the danger of impersonality and questionable service quality.

2. *The Product Concept* - which holds that consumers will favour those products that offer the most quality, performance, and features. Believing this to be so leads to a 'love affair' with the product, and in the case of TAFE, can lead to a supermarket approach to marketing: TAFE merely has to display its 'wonderful' educational products and the customers will select them. The danger of this approach is that of 'marketing myopia', an undue concentration on the product rather than on the need which it is supposed to fulfil. Indeed, while the product is being improved, the market may be moving in a different direction. How many 'products' does TAFE have which are actually obsolete?

3. *The Selling Concept* - which holds that consumers, if left alone, will normally not buy enough of the organisation's products. The organisation must therefore undertake an aggressive selling and promotion effort where the aim 'is to sell what they make rather than make what they can sell'. This strategy may be evident in those TAFE colleges where courses have not reached their quota. The danger of this approach is that disappointed customers may criticise the product and damage the credibility of the provider.

4. *The Marketing Concept* - which holds that the key to achieving organisational goals consists of determining the needs and wants of target markets and delivering the desired 'satisfaction' more effectively and efficiently than competitors. Kotler claims that research shows that 'a satisfied customer tells three people about a good product experience, a dissatisfied customer gripes to eleven people' (1991, p.16). Three dangers inherent in the marketing concept are: (1) 'no company can operate in every market and satisfy every need', (2) the customer may not know what is needed, and (3) there can be strong internal resistance within organisations.

5. *The Societal Marketing Concept* - which holds that the organisation's task is to determine the needs, wants, and interests of target markets and to deliver the desired 'satisfaction' more effectively and efficiently than competitors in a way that preserves or enhances the consumers' and the society's well-being. This approach requires three considerations to be balanced: *company profits, consumer want satisfaction*, and *public interest*. In the TAFE context, there would be a need to balance all three priorities whilst holding national and state priorities in focus. Clients' needs for short term training may not accord with long term skill acquisition goals. In other words, the 'client' in all its forms (employer, student, and community) must be considered.

Following the initiatives suggested in the *Scott report* and the subsequent work on the TAFE organisational structure (see NSW TAFE Commission 1996) the NSW TAFE Commission has developed comprehensive policy and procedures for the marketing of its educational products and services. The Commission has defined a joint venture as 'the establishment of an alliance or association between TAFE and an outside organisation for the purposes of providing training courses or managing other projects related to the provision of TAFE's core business of further education and training' (TAFE NSW Gazette, 1991). The Commission states that 'the term "Joint Venture" does not cover simple "fee for service" contracts or the donation and loan of

equipment to TAFE.' Joint Ventures, essentially, are joint trading arrangements and 'the prime justification for establishing a joint venture is to create benefits which cannot be achieved through simpler mechanisms.'

In the document *Marketing TAFE NSW* (1991a) three marketing goals were identified:

1. Identifying, anticipating and satisfying customers' needs.

2. Engendering a customer service orientation at all levels in the organisation - from the caretaker at a country college to the managing director of TAFE ('TAFE people must begin to think marketing, to breathe marketing, to see opportunities to promote TAFE at every turn').

3. Developing business planning and financial skills, so that TAFE managers can develop commercially successful products.

Issues

The literature review has highlighted the importance of the provision of high quality technical education which meets the needs of the client. This requires flexible, responsive organisational structures, infused with an organisational climate which emphasises quality. In the provision of technical education a problem exists in defining who is the 'client' - the student, the employer or the community. By community is implied the population as a whole whose living standards have been raised as a result of increased national prosperity, dependent it is believed on the achievement of the national strategic goals of boosting exports and increasing the ability of Australian firms to compete against imports. TAFE must explore new areas for involvement with industry, especially in innovative projects making use of new technologies and processes. This, in turn, will call for additional skills in managing or participating in industry/TAFE collaborative ventures.

The next section reviews the case studies.

THE CASE STUDIES

The five case studies were:

1. Textile and Fibre Research Institute (Vic)

A joint organisation between TAFE Melbourne College of Textiles and La Trobe University with the mission to conduct textile and fibre research in Australia to benefit the textiles, clothing and footwear (TCF) industries.

2. QANTAS/Regency College of TAFE Hotel School (SA)

The provision of training for QANTAS flight cabin crew.

3. Building Industry Management Education and Training Centre (NSW)

A motel with training facilities incorporated, built on TAFE land, to provide management courses for the building industry .

4. Skills audits - Fremantle College of TAFE (WA)

'Skills audits' for two companies engaged in metal fabrication: Ocean Shipyards and Western Construction Limited.

5. 'Introduction to adult apprenticeships' - Mudgee TAFE (NSW).

A course to introduce seven trades assistants to adult apprenticeships at the Australian Cement Company, Kandos, NSW.

Case Study 1: The Textile and Fibre Research Institute

The Textile and Fibre Research Institute (TFRI) is located within the TAFE Melbourne College of Textiles, and is a joint venture between the School of Agriculture, La Trobe University, and the Melbourne College of Textiles. The combined facilities of both institutions give TFRI access to a wide range of service facilities and contacts. The development of the concept of the Institute was facilitated by an Innovative Projects Grant of $22,700 from the National Board of Employment, Education and Training (NBEET).

This grant enabled Dr John Leeder, Chief Research Scientist of the Institute, in collaboration with Melbourne College of Textiles (TAFE) staff, to examine the potential for expansion of TAFE textile research facilities. The study included:

1. An overseas tour to visit 25 major textile and fibre research establishments in order to generate data on research projects, R & D services to industry, training in R & D, staff recruitment and level and type of staff development, funding sources, and infrastructure.

2. An investigation of the R & D service and training needs of the Australian textile industry.

The Textile and Fibre Research Institute was established and Leeder (1991) describes its aims as:

- To set up a non-fibre-specific research and development centre of expertise to provide a service to the Victorian and Australian textile and fibre-using textile, clothing and footwear (TCF) industries.

- To combine the technology-oriented teaching, testing, processing and industry-liaison activities of a TAFE college (the Melbourne College of Textiles) with the academic and research facilities (personnel, equipment, techniques) of a university (La Trobe) and, in particular, the School of Agriculture and its scientific background in natural-fibre production.

- To provide post-graduate training in collaboration with industry. (The combined facilities of La Trobe University and the Melbourne College of Textiles provides an ideal base for applied post-graduate training in the TCF area.)

- To initiate new post-secondary (non-graduate) training in research and development (R & D) methodology, using experienced technologists already in the textile industry. (Several Australian industries have expressed a need to become involved in R & D activities, particularly in the area of product development and in overcoming of product deficiencies. This need is reflected in a wide range of enquires already received from the industry.)

- To involve TAFE staff in training for research and development in the textile area, and to increase the utilisation of TAFE facilities in R & D services to Australian industry. The Institute is ideally placed to provide such a service, and three Master of Science projects are expected to begin in 1991 involving staff members at MCT. In each case, the staff members will be working in areas directly beneficial to the industry, supported by industry funds and include external co-supervisors actually working in the industry.

- To provide an operating base for the growing number of retired or semi-retired scientists and technologists, who have much to offer in terms of skills, knowledge and experience. This will, in turn, increase the potential of the Institute to satisfy an already established need for technical service to the industry.

- To participate in international collaborative projects to benefit Australian textile products overseas.

Construction of a laboratory for the TFRI commenced at the Melbourne College of Textiles in May 1989. No specific government funds were provided for this but a number of companies and organisations donated equipment or substantial funding. In the initial stages of setting up the Institute support was provided from:

Australian Wool Corporation.
Cotton Research and Development Corporation.
Australia/China Council.

Victorian Premier's Department.
CSIRO, Division of Wool Technology.
Victorian Education Foundation.
National Board of Employment, Education and Training.
Melbourne College of Textiles.
School of Agriculture, La Trobe University.
Bradmill Textiles Ltd.
Hoechst Australia Ltd.
Ciba-Geigy Australia Ltd.

The major industry contributors to date have been the Australian Wool Corporation, the Cotton Council of Australia and the TCF Development Authority, with the first two organisations each providing funds of around $90,000 per annum for the purpose of major research. Currently two PhD programs are being conducted, representing a 'breakthrough' in the use of TAFE facilities at this level. Joint ownership of the research has been negotiated.

According to Leeder (1991) the institute is now virtually self-sufficient in terms of apparatus and fully functional as a textile research laboratory. Future projects to be undertaken by the Institute will depend on availability of funds, but interest has been expressed in applied R & D projects such as the investigation of cotton processing problems, development of new products and processes, study of the relationship of fibre properties to processing performance, and development of new test methods. Interest has also been shown in conducting more fundamental research such as textile conservation and restoration and histological structure of fibres.

Important issues

The concept of the Institute was unique and reinforces the importance of adhering to the fundamental marketing principle of identifying a need and filling it. The Textile and Fibre Research Institute brings together the problem-solving capacity of pure research and the applied research needs of industry. By attending to the short-term research needs of the TCF industry, it complements the research undertaken by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) which conducts longer term research. The lack of short-term problem-solving textile research now addressed by the institute was exacerbated with the closure, in the mid 1970s of the Textile College at the Gordon Institute of Technology, Geelong, Victoria.

The aims of the TFRI also accorded with national goals of enhancing the ability of the textile industry to compete on export markets (and compete against imports) by developing the knowledge needed to produce high 'value added' goods, for example, research to improve the resistance of wool to creasing when worn would increase the marketing potential of wool-based garments.

Built into the initial concept of the TFRI was the use of 'research associates': retired researchers who would work for a small fee. Their use would solve staff training problems and enable research problems to be broken into segments, to be worked on in parallel. It would also draw upon a pool of trained technologists to do the type of research which would not qualify for a higher degree, freeing graduate students to perform the type of research which would qualify for a Master of Science degree or a Doctorate of Philosophy (PhD).

Since those undertaking the research would be mostly located at the Melbourne College of Textiles, a unique opportunity existed for interaction between TAFE staff and the researchers, leading to a broadening and deepening of skills by exposure to a different textile environment. Moreover, TAFE staff who wished to up-grade their qualifications could undertake the research component of higher degrees using the facilities of the Institute, of La Trobe University, or industry. At the time of writing, three staff of the Melbourne College of Textiles were preparing to enter higher degree candidature, in association with the Institute.

The Institute has combined where necessary the practical world of a TAFE specialist college, the Melbourne College of Textiles, with the advantages derived from direct links into a university. The Faculty of Agriculture, at La Trobe University, in addition to the academic climate, offered: seminars, computer expertise, statistical consulting, and multi-skilled tradespeople (for, among other things, the construction of complex research equipment).

Well before the Institute was established, the Melbourne College of Textiles had adopted the principles of total quality management (TQM).[4] In doing so, the college established two important precedents which contributed to the success of the Institute:

1. TQM helped to establish a climate of 'responsiveness to the needs of the client'. This, in turn, placed responsibility on management to be prepared to take the risks of the innovator, and to ensure success by putting the right people, those with energy and drive, in the right place to succeed.

2. TQM also ensured the right management culture to nourish the development of the Institute in its early implementation phase.

Another significant success factor was the inclusion of the concept of the Institute on the college strategic plan, in order to establish closer links with industry to enhance the acquisition of textile skills, and for 'up-skilling' college staff.

The management of the Melbourne College of Textiles realised the importance of acquiring the best advice, especially legal advice on intellectual property rights and on patents, the question at issue being, who owns the commercial potential of the Institute's R & D? Administration and legal fees accounted for significant costs in setting up the Institute.

This case study highlights the importance, when establishing innovative projects, of knowing when to adopt a management style which permits the 'idea development' stage to proceed with encouragement and without hindrance, at the same time being able to recognise when this stage has reached its goal, then bringing in the business expertise to tighten the legal and administrative arrangements for the venture.

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[4] A definition of 'total quality' is provided by Sherr, cited in Cope (1991, p.58) 'Total quality is a philosophy of continuous, constant, impassioned improvement everywhere by everyone in an organisation all the time. Berry (1991, p.3) adds: 'Quality relates to the outcomes perception. Quality is: Meeting customers needs and reasonable expectations.'

Case Study 2: QANTAS/Regency College Hotel School (SA)

In 1989 the Regency College of TAFE, South Australia, won a contract against competition which included NSW TAFE, Bond University and the Intercontinental Hotel, for the development and delivery of a skills training program for QANTAS flight cabin crew.

As well as increasing customer service skills of existing cabin crew QANTAS required training for new crew members. As the project unfolded, award restructuring became a significant element in the development of a training program. The program for cabin crew was to be linked to award restructuring so that it provided a career path progression for cabin crew.

Later, as airline profits began to fall worldwide, partly due to the Gulf Crisis, QANTAS came under strong pressure to cut costs. By developing its training program in association with Regency College Hotel School, training overheads could be reduced. In particular, QANTAS would not be saddled with the costs of building a new training facility.

The total value of the contract was three million dollars. This included $900,000 in grants from the Education and Training Foundation (ETF) and the Commonwealth Department of Employment, Education and Training (DEET). The project is currently staffed by six people, led by Derrick Casey, Deputy Head of the Regency College Hotel School.

The outcome of the partnership between QANTAS and Regency College Hotel School was the co-operative development of the initial entry customer service skills training programs and employee development programs required by QANTAS to implement the new training structures associated with award restructuring throughout the company. The initial contract was between Regency and QANTAS Flight Catering Ltd (QFCL) which is a wholly owned subsidiary of QANTAS Airways Ltd, and which provides in-flight catering facilities in Sydney and Perth, and ground catering requirements for QANTAS in eight locations at Sydney Airport.

The partnership anticipated future training needs and offered QANTAS two significant advantages:

1. Access to a national network of preferred colleges (TAFE colleges), obviating the problems of dealing with a number of individual colleges. The network would include:

   Regency College Hotel School, South Australia;
   Dandenong College of TAFE, Victoria;
   Ryde College of TAFE, New South Wales;
   College of Tourism and Hospitality, Queensland;
   Fremantle College of TAFE, Western Australia;
   Canberra College of TAFE, Australian Capital Territory.

2. No major capital expenditure required in the building and on-going conduct of a major training centre.

The partnership would provide:

- accreditation of work experience and in-house training programs into nationally recognised tertiary awards, principally;
  The Advanced Certificate in Hospitality;
  The Advanced Certificate in Travel and Tourism;
  The Diploma of Hospitality Management;
  The Diploma of Tourism Management;

- assistance in the design of specific training programs to enhance the skills, knowledge and career opportunities of all staff;

- quality control through national management of all programs delivered from any designated locations in Australia;

- total consistency of the agreed programs from all providers;

- the ability to modify (increase or decrease) student output with ease as required in reference to pre-entry programs.

Objectives for the program for 1990 were to include:

- establishment of a national network of TAFE colleges to provide courses in hospitality, travel and tourism to service the needs of both pre-entry and on-going employee customer skills development;

- production of skills training modules including student learning materials and lecturer guidelines;

- development and implementation of recognition processes to establish the status of current staff members in regard to tertiary qualifications appropriate to their career development;

- development of appropriate career path structures linked to educational qualifications;

- development of common core programs for all customer service staff;

- development of train the trainer programs for QANTAS supervisors.

In implementing the program, strategies considered important are:

- the development of a 'learning culture' in an enterprise, which would serve as an effective model for the wider hospitality and tourism industry;

- the provision of opportunities for multiskilling of staff, with broader career opportunities than are currently available;

- the formal recognition and articulation of workplace training into educational qualifications (for example, the Advanced Certificate in Hospitality, aimed at middle management staff).

Tasks to be undertaken during the course of the project include:

- identifying/confirming skills requirements;
- developing company performance standards;
- developing short form curricula;
- developing assessment processes;
- conducting train the trainer programs for supervisors/managers;
- determining delivery systems;
- developing learning materials;
- implementing programs;
- evaluating programs.

TAFE will assist in the development of open learning materials, advise on the content of subject with regard to gaining credit, develop articulation processes between company training and educational qualifications, assist in the development of assessment processes, assist in the establishment of appropriate recording systems, seek appropriate status as a registered in-house trainer through the Australian Hospitality Review Panel, assist in the provision of specialised training programs, identify essential external provision of educational programs which QANTAS employees may wish to link into and assist in the establishment of company wide course standards.

Recognition of prior learning

The recognition of currently held skills and knowledge would be achieved by:

- development of the skills and knowledge required by each level of each occupational classification;
- clear statement of company standards for each skill/knowledge area;
- development of assessment criteria for each skill/knowledge area (or module);
- assessment of the potential credit value of skill/knowledge held in the context of the appropriate career qualification;
- provision of qualified assessors to conduct the assessment process and to train suitably qualified workplace assessors from QFCL staff in on-job assessment.

The 'workplace classroom' concept

A key concept in the training program designed for QANTAS staff was 'the workplace classroom' by which lecturer/trainer directed off-job learning is translated into student/employee centred self-paced, competency-based learning in the workplace. The strong emphasis is on the company owning the training system, and that its success requires expert workers, supervisors and managers to take some responsibility for on-job training and assessment of results. The concept values learning as being as much a part of the work day as is actual working. According to Casey (1991) effective implementation of 'the workplace classroom' centres around the following major principles.

- Performance of training needs analysis, and 'skills audits'.

- Training of supervisors, leading hands, expert workers and managers as on-job trainers and assessors. The role of the company trainer becomes one of a learning facilitator working with and supporting on-job trainers to maintain training materials and processes.

- Development of competency-based assessment criteria linked directly to industry/enterprise standards and 'key responsibility areas' of work teams.

- Design of training packages that relate directly to the workplace, maximise on-job skills development and link with full credit to appropriate national qualifications.

- Off-job training delivered in short segments (30-60 minutes) on location in the company, pre or mid-shift over a reasonable period to enable linking into on-job practice.

- Recognition of prior learning to ensure learning is not wasted by being repeated and skill/knowledge held by employees is maximised.

- Clear articulation between national competency standards, industrial awards and academic/industry qualifications, to enable better career path opportunities.

- On-going professional support from the educational partner and company training department to the on-job trainers and learners.

The role of the educational partner (accredited educational provider) includes:

- assisting in the development of learning materials in co-operation with the company training department and/or employees;

- ensuring that the learning programs link into appropriate formal qualifications; and

- acting as a broker to link employees into further education and training opportunities for future career development.

Assessment is a continuous appraisal against clearly written performance standards required at each level of the occupational structure. Assessment may be a combination of: self assessment; knowledge testing (written and/or oral); supervisor job observation; project work related to the job (for example, identify three major areas of concern in terms of customer service in your area and suggest how they may be rectified).

Difficulties which may be encountered with this system, according to Casey (1991), are:

- Ensuring the quality of the on-job mentorship and that sufficient opportunities exist for the practice of the skills which are learned;

- not all supervisors, managers or expert workers can cope with the mentorship and evaluation role; and

- initial resistance based on the fear that it would add to existing workload.

Extension of the program to other areas of QANTAS

As work on the cabin crew training program was being implemented, it became clear that many of the skills and knowledge profiles required for incoming and outgoing staff across the company had a high degree of commonality, particularly in relation to 'customer service'; those personnel working in the following areas:

Airport;
Reservations;
Travel Centre;
Catering;
Freight;
Market Training.

Consequently, Regency College has become involved in a much larger program of training development than was originally envisaged. Indeed, Regency College and QANTAS have formed a partnership for the co-operative development of the initial entry customer service skills training programs and employee development programs required by QANTAS for the implementation of new training structures associated with award restructuring throughout the company. The next area to be addressed would be engineering maintenance.

Important issues

Regency College had the necessary expertise in the provision of training in the hotel catering area and, more importantly, it would appear, staff of the Regency College Hotel School had for some time been developing a 'product marketing' climate with a client-centred approach to educational provision, rather than a TAFE centred approach. As a result, the Hotel School had developed, and documented, a 'workplace education' philosophy, which passed control of the training program into the hands of the client. Complementing the program is a clearly written 'package' describing the components necessary to link training development and delivery to award restructuring within the hotel and tourism industry, namely:

- recognition of prior learning;
- common-core curricula;
- competency-based training;
- accreditation into national awards;
- assessment;
- quality assurance, and
- 'train the trainers' program for QANTAS supervisors.

It would appear that the principal reason for Regency College's success in winning the QANTAS contract was its articulate and professional approach to the client's award restructuring and training issues. But there were other important ingredients of this success.

By placing a Project Manager (Derrick Casey) on-site at QANTAS headquarters at Mascot (Sydney), the College fulfilled one of the major requirements of QANTAS in relation to the partnership management. QANTAS wanted one person to deal with, who could make and implement the necessary decisions. To quote a member of QANTAS management:

> We wanted a one stop shop, full of entrepreneurial people, who would give us the product we wanted, on time, which was more cost effective than any other supplier.

Moreover, QANTAS did not want to know about any of the decisions which the educational provider had to make - these were to be 'invisible'.

An important observation made from the TAFE side of the partnership was that the negotiation phase may take a little time, but when the company makes its decision, it is essential for the educational partner to respond quickly. During the negotiations, the general approach had to be one of flexibility and responsiveness, in line with the 'workplace education' philosophy which put control of the program in the hands of the client.

Having a TAFE project manager on-site at Mascot was essential because the major tasks at the beginning of the project involved negotiating with individual QANTAS managers/stakeholders, selling the educational concept and convincing them of the program's value. This process required a high level of sensitivity to the client's management and organisational culture and to sensitive issues within that culture. QANTAS has an enviable safety record amongst world airlines. Stemming from this, strong beliefs about the quality and even the superiority of in-house skill development programs existed with the organisation. It was important for the educational partner to accept these beliefs, and to adopt a 'low key' sales role.

During the case study, and for economic reasons mentioned earlier, QANTAS announced substantial cuts in its workforce. These unfortunate events highlight a reality facing current industry/TAFE co-operative arrangements: the need for cost-efficiency in the development and delivery of the kinds of skill enrichment programs necessary to retain a competitive edge.

Case Study 3: The BIMET Lodge and Training Centre, Newcastle.

BIMET Lodge which opened in April 1990 is a residential/training facility on TAFE property in Newcastle (the Union Street Annex of the Hamilton College of TAFE). The acronym BIMET stands for the Building Industry Management Education and Training Centre. The facility contains 29 twin/double units of motel style accommodation, commercial kitchen, restaurant, office, and a swimming pool donated by an industry sponsor. The facility contains a conference room, which serves also as the dining room and as an auditorium for group presentations. This room is surrounded by three seminar/lecture rooms. A fully equipped computer room offers technology access with fifteen networked personal computers.

Impetus for the venture came from the number of bankruptcies in the building and construction industry. The business collapses were a reflection of unfavourable economic conditions within the industry and poor management practices. The venture was established as a joint initiative between the Building Services Corporation (formerly the NSW Builders' Licensing Board), the NSW TAFE Commission, and the Commonwealth Government. The S.P.H. Group manage the motel facility (Southern Pacific Hotels Corporation) and their management fee is considered to be the hospitality industry contribution to BIMET. The greatest advantage of BIMET Lodge is that residential training is provided to satisfy the needs of building industry managers and employees.

The aims of the centre are to:

- provide management training programs for the building and associated industries;
- promote, advance, encourage develop and improve the knowledge and understanding of management practices and business acumen;
- encourage the use of the motel facility by the Newcastle urban TAFE network and TAFE generally and by industry groups and manufacturers;
- provide a service to the building and associated industries, and other educational providers/organisations via the residential capacity of the Centre which allows intensive short programs to be run with overnight or weekend accommodation available;
- support and encourage advanced learning methodologies and utilisation of computer aided instruction and operation;
- promote the development of management skills, competence and understanding.

The provision of training in management and business skills to the building industry is accomplished mainly by means of short residential and non-residential courses, conferences and seminars conducted by TAFE, the Building Services Corporation and industry groups. The Centre's computer room is also used by TAFE students and the facility is used as an *in-situ* training resource for students of tourism and hospitality courses at Hamilton College of TAFE (the State's second largest Food, Tourism and Hospitality training centre).

BIMET is a company limited by guarantee duly incorporated under the provisions of the Companies Code of NSW. Ownership of the facility is vested in the Government of NSW. TAFE has granted an exclusive licence to BIMET Limited to manage the facility for a period of three years from December 1989.

The principle underlying the establishment of the training motel facility was that it would be funded by industry at no cost to the government. BIMET Lodge trades as a normal motel facility, and is open throughout the year. Operational costs are offset through fees and tariffs charged at competitive rates. The motel accepts public bookings at market rates and the training facilities are also used in raising revenue through delivery of fee-for-service courses for industry. At July 1991 the Centre is breaking even.

The capital cost as estimated at the beginning of the project was $2.2 million. The Building Services Corporation (BSC) committed $1 million to the project, one million was sought from the Department of Employment, Education and Training (DEET). The site was provided by TAFE (value approximately $0.5 million. A grant from the Education and Training Foundation of NSW (ETF), assisted with course preparation, consultant fees and training.

BIMET's Board consists of members of management from the building industry, the Building Services Corporation, hospitality industry and TAFE. The centre is dually managed: accommodation by the motel manager, and the training by an executive training officer who duties include:

- providing training programs in building management;
- developing and maintaining links with building organisations and companies;
- liaising with TAFE regarding course development, resource development, course delivery, and accreditation;
- arranging for the development and delivery of courses; and
- associated resource management.

An important aspect of this venture was the need to 'fast track' the initial phase of this innovative substantial project for the following reasons:

- Four funding sources were involved (DEET, BSC, TAFE, and ETF).

- High-level negotiation was required (Minister and Chief Executive Officer level).

- There was a perceived serious skills deficiency to be addressed in Newcastle City and its surrounding regions (lack of management skills in personnel who would have difficulty in attending weekday training programs).

- There was an additional important need to be met: access to practical skills training for TAFE students of tourism and hospitality (including motel operators).

The 'fast tracking' of the project was an important strategy in retaining the interest of the various players during the set-up phase; reflecting the importance when setting up innovative ventures of 'keeping the momentum going'. 'Fast tracking' of complex projects places a premium on skills of negotiation. Indeed, with the benefit of hindsight, the project would have benefited had a full-time manager with strong negotiating skills been used.

One of the other major lessons learned was the value of setting a 'goal vision' early in the negotiations so that all parties would know what they stood to gain from a successful completion of the venture.

Case Study 4: Skills audits Fremantle College of TAFE (WA) - Ocean Shipyards and Western Construction Ltd

In 1990, Ocean Shipyards (WA) Pty Ltd, located in Fremantle, approached TAFE, Western Australia, through the South Metropolitan College of TAFE, at Rockingham, for assistance in determining the skills and training needs of its 160 member workforce. Underlying the company's request was the fact that:

- The metal trades award restructuring required that metal workers employed by the shipyard be classified into the new award.

- the shipyard had adopted a quality assurance plan which required job descriptions to be developed for each position within the company;

- the introduction of the training guarantee legislation required the shipyard to invest in employee training and skills acquisition.

The College responded with a training analysis plan comprising:

- Skills analysis - to provide a skills matrix outlining the skills needed for employees to perform their duties.

- Skills audit (inventory) - to provide a profile of each individual employee's active and latent skills, and formal and informal learned skills.

- Training needs analysis - to identify the gap between actual and required performance in terms of knowledge, skills and abilities.

The methodology for the project was described by McCarter and Love (1990) as follows:

1. Job descriptions

Senior staff throughout the company were interviewed to identify the duties and tasks of each occupation. These results were then validated with selected employees currently working in the occupation,

2. Job/skills analysis

Based on the information obtained from the job descriptions in the shipyard, a skills analysis was carried out and a skills matrix based on the generic task of each occupation was created.

3. Skills audit and training needs analysis

A questionnaire was developed and interviews were conducted with each person employed in the company. The questionnaire covered: individual employee profiles; general skills competencies; job analysis skills (skills matrix); additional skills held by employees; and additional questions to derive information which would be of assistance in classifying employees into the new award.

The training needs analysis which was combined with the skills audit, sought to identify:

Job specific skills. These were skills and skill levels possessed by each employee in order to carry out the specific job requirements. The additional purpose here was to reveal any gaps in skills and resultant training needs.

Company generic skills. The general skill areas common to all employees were identified with the aim of creating company-specific training packages.

Employee desired skills. The purpose here was to elicit areas of employee interest and to identify those employees who wished to acquire further skills either in their current occupation or another area in which they may be particularly interested.

The outcomes from the study were somewhat broader than originally envisaged. Issues of concern to staff were summarised and recommendations were made. Areas covered were: human resource needs (including identification of gaps in the company organisational chart); training issues associated with the installation of a new computer system; and the need to implement a

system to record on-site training. Future training options were also developed.

The techniques and methods used by Helen McCarter and David Love at Ocean Shipyards were applied, with refinements, for the skills audit undertaken at Western Construction Company.

Important issues

It was apparent in the interviews with management of the two firms, that the results of the audit of employees' skills are used in a variety of ways:

- to contribute to the introduction of management cost-efficiencies, including identification of staff who could be declared redundant;
- to identify staff whose skills, previously unknown to management, may enable the firm to make use of their skills in other areas;
- to use the process of the skills audit as part of a process of improving management/worker communication;
- to use the results of the skills audit as part of the push to achieving total quality control or some other form of quality assurance.

An important outcome from these projects is yet to be realised: the increased use of TAFE's short courses, which will flow from the metals award restructuring process. Both companies were well satisfied with the work undertaken by TAFE.

Case Study 5: Introduction to adult apprenticeships - Australian Cement/Mudgee TAFE (NSW)

As part of a rationalisation program, Australian Cement Limited, at Kandos, NSW, wanted to move a group of mature age 'trades assistants' (Metal Trades Labourers) into the trade stream by placing them in adult apprenticeships. These were adult workers who had been with the company for some time but had not been in a structured program of training for a good many years. An additional problem facing this group identified by company training staff, was poor literacy skills.

The learning problems facing mature age students were described by Foyster (1991, p.43):

> Mature age employees tend to have less time available for out-of-work study, it may have been many years since they were required to use maths and science skills, nor are they as conditioned to spending long periods of time studying as employees who may have recently completed technical college programs. There may be mental or emotional barriers to overcome, such as having to abandon their traditional position of seniority and learn new skills side-by-side with younger employees with fewer years of service (Foyster, 1991, p.43).

Australian Cement Limited approached Mudgee College to develop a 'confidence building' program for the 'non-tradespersons' which would develop literacy/numeracy skills and introduce

them to adult apprenticeship. In meeting these aims, the program would also fit into the needs of award restructuring within the cement industry. Seven persons undertook the training, each receiving 20-24 hours of instruction.

The objectives of the course were to:

- give employees confidence to take up offers of retraining programs;
- prepare employees for studying and completing exercises required by apprentices;
- help employees revise basic numeracy and literacy skills;
- reinforce existing abilities so that employees will feel confident in their return to formal education.

Total cost of the project was $8230, of which the company contributed one-half (releasing staff from work; providing teaching facilities and equipment). The NSW Education and Training Foundation (ETF) contributed a grant of approximately $3500 for the preparation of course materials, funding the pilot course and travelling costs. TAFE contributed $630 for consultancy and travel.

Important issues

This case shows a TAFE College doing what it can do best: respond quickly to the client's needs in developing and delivering a short course. Key factors in the success of the course were:

- The existing credibility and good reputation of the College, especially in the engineering trades;
- the ability of the teacher to design and deliver a course which met the needs of both the client, Australian Cement, and the students; and
- the skill of the College Principal in securing the necessary additional funds to make the program a success.

Since the request for the program was not received until late in the year, it was necessary for the College to move quickly so that the students could enrol in the trade program at the beginning of the following year.

At the time of writing, the indications were that six of the seven students would successfully complete the introductory course. Key success factors included: visible management support as well as peer support. The support of peers was reflected the change in the group dynamics of the workshop. Former hierarchical divisions based on qualifications were reported to have broken down, creating a more egalitarian or 'all in' atmosphere. The potential value of this change to workplace culture for the success of quality assurance programs was noted by the company management.

DISCUSSION AND CONCLUSIONS

Summary of 'success factors' from the case studies

1. The Textile Fibre Research Institute

'Success factors' in the establishment of the Institute may be summarised as:

- the establishment of a management climate at the Melbourne College of Textiles which fostered a client centred and entrepreneurial approach to serving the needs of the TCF industry. This, in turn, provided a receptive climate for the establishment of the Institute since its aims included filling unmet needs in the TCF industry in areas of problem-solution (applied) research;

- the availability of an expert researcher, Dr John Leeder, who had authored approximately 90 scientific papers in international journals, in a 20 year career with the CSIRO;

- the establishment of the link with La Trobe University, School of Agriculture (Dr John Quilkey). The University provided access to expensive research equipment and allowed researchers engaged by the Institute to work on research projects, to also enrol for higher degrees (Masters and Doctoral degrees);

- recognition of the value of the concept by the National Board of Employment, Education and Training (NBEET) which provided the vital seeding grant for the development of the concept of the Institute;

- the close match between the aims of the Institute and the needs of the textile, clothing and footwear industry for applied R & D.

The setting up of the Textile and Fibre Research Institute also highlighted the importance of knowing when to shift management style from the permissive style, appropriate to the 'idea development' stage, to the hard-headed style necessary to formalise administrative and legal arrangements.

2. The QANTAS/Regency College partnership

The QANTAS/Regency College venture demonstrated the value of having a well developed and clearly written educational philosophy, in this case packaged under the title 'workplace education', to assist the process of winning commitment to the training program from managers within the various levels of the organisation. Due to the complexity of the client organisation, considerable negotiation skill was required as well as sensitivity to client organisational culture and beliefs to ensure that the program was successfully implemented. Such was the size of this project that staff were required staff to work full-time, on site and the College was prepared to release key staff for a lengthy period.

QANTAS wanted to deal with someone who could make and implement the necessary decisions. However, QANTAS management considered it important that whatever had to happen in the background to implement those decisions, should remain invisible to the company. This case study also highlights the importance of the educational provider being able to move quickly once the client makes a decision.

3. The BIMET Lodge

The establishment of the BIMET Lodge had three features in common with the QANTAS/Regency College venture. It demonstrated the value of setting up a 'goal vision' early in the negotiations so that all parties could see the benefits of co-operation; it showed the importance of being able to 'fast track' a complex project; and it highlighted the importance of strong negotiating skills.

4. 'Skills audits' at Ocean Shipyards and Western Construction

These skills audits performed by TAFE staff, showed that the success of these are judged by the extent to which they contribute to:

- management cost-efficiencies, including identification of potentially redundant staff, and identification of staff whose skills could be used elsewhere;

- improvement in management/worker communication; and

- value in the establishment of quality assurance processes.

It was noted that an important outcome flowing from these projects for local TAFE colleges would be increased demand for short courses.

5. Introduction to Adult Apprenticeship

The Introduction to Adult Apprenticeship course developed by Mudgee College of TAFE for Australian Cement, Kandos, showed a College building on its reputation, responding quickly to the needs of the client, assigning the right person for the job, and demonstrating skill in securing additional funds for the project.

Barriers or problems facing industry/TAFE liaison

Difficulties which industry face

- Industry may lack the capacity to identify and state needs, and may be unaware of services which TAFE can offer, especially its capacity to adapt to enterprise needs.

- Small firms do not see training as a high priority.

- Employers may not have the time to liaise with TAFE or may be unsure who to contact in TAFE. A firm may not be able to release staff at the required times.

- Employers can have difficulty in achieving congruence between the training needs of the company, such as for skill development in processes specific to the company and those of the student for skills in general use within the industry, to improve employment and promotion prospects.

Difficulties faced by TAFE

- TAFE may lack knowledge of the actual level of technology required by local firms.
- There may be a lack of adequate funding for promotion of TAFE's services.
- The disparate nature of industry can create difficulties in identifying the key people with whom the educational provider should liaise.
- There can be a lack of continuing commitment by the industrial partner, for example, after the initial training need is met.
- There can be a lack of research data on industrial needs.
- There can be a serious time lag between establishing and responding to industry needs, due to restraints of time and resources, for example, a college may not have the ability to provide courses at the required time and place.
- TAFE staff may lack confidence in their ability to assist industry and may lack familiarisation with the equipment used in industry.
- TAFE can experience difficulty balancing the demands of industry with those of mainstream courses.
- TAFE is often viewed by industry as having cumbersome accreditation processes, and as suffering from bureaucratic intrusion and delays.

What is especially important in industry/TAFE liaison?

Here, the insights gained from the case studies are linked to the conclusions from the literature, and suggest several strategies for success.

Strategy 1: Meet the needs of the client and respond quickly

TAFE staff must be willing to adapt to industry's needs. In its most fundamental sense, as shown by the restructuring of TAFE in Victoria and NSW, this means major changes to organisational structures and staffing and realignment of TAFE's corporate mission to support new ways of providing technical and further education. In day-to-day operations, this means tailoring courses to specific industry needs, delivering them at venues and at times which suit the industry, and evaluating their quality.

Two of the case studies - QANTAS and Australian Cement - confirmed the importance of speed of response to industry needs. TAFE must develop the capacity to respond quickly to

business/industry needs, and most importantly, to help firms to achieve training goals with cost efficiency.

Implementing this rule will mean that colleges must maintain diverse industry networks, have an adequate database describing local industry, and be active in use of advisory committees.

Strategy 2: Industry must clearly define the training issues - if necessary, with TAFE's assistance

Industry must be clear in identifying broad training directions/goals in relation to both current and future technologies. The identification of training needs, development of training plans, and implementation of customer specific training programs, can be a complex process. Three techniques which are important in improving the acceptance of TAFE's advice, demonstrated in the case studies, are:

- placing the training analysis on a research foundation;
- use of a 'goal vision' to communicate the benefits of a training program to 'stakeholders'; and
- ensuring that the various concepts of the program are well articulated, well documented and 'packaged' into an integrated whole.

Strategy 3: Develop a mutually beneficial working relationship

As the QANTAS/Regency College partnership showed it is important for both parties to be receptive: TAFE to the client's needs, and the client to TAFE's advice and experience. Both parties must play an active role in the venture and accept jointly responsibility, a task which may be difficult to achieve unless the educational partner is prepared to understand the client's business purpose, and organisational climate, and be sensitive to organisational issues. Both parties need to respond positively, but not uncritically, to change and be willing to be innovative. Each party must respect the expertise of the other (TAFE is not the only one who can produce a good skill enrichment program).

Strategy 4: Be pragmatic, practical, but be prepared to take calculated risks

Do careful and thorough planning before the set-up phase, and concentrate on practical outcomes. Have a clearly written agreement or contract. Charge fees at market rates. In the final analysis, be prepared to take calculated risks because the future training environment will be continually changing and difficult to analyse with any sense of certainty.

Strategy 5: Develop an appropriate organisational culture

There must be strong personal commitment by the college management to the importance of industry training and of meeting the needs of the 'client'. An organisational climate must be created in the college where teaching staff can perceive tangible benefits of collaborative efforts and quality consciousness is pervasive.

Strategy 6: Think 'quality, quality, quality'

Marketing organisations impress upon us that determining the needs, wants, and interests of target markets and delivering the desired 'satisfaction' more effectively and efficiently than competitors in a way that preserves or enhances the consumers's and the society's well-being. However, this approach calls for a balance between three often competing considerations: *revenue raising, consumer want satisfaction,* and *public interest.* In the TAFE context this means balancing all three considerations for the 'client' in all its forms, (employer, student, and community) while at the same time addressing national and state priorities.

Strategy 7: Make the necessary investment in human resources

A strong theme running through all the case studies was the importance of putting the 'right people in the right place at the right time', and ensuring that they are offered appropriate management support.

Strategy 8: Actively promote the skills and capability of the College

TAFE must demonstrate genuine interest in providing skills development programs in areas of interest to industry. Furthermore, TAFE must market its excellent potential as well as its entrepreneurial operations at both the State and college level.

Staff training

The case studies have highlighted a number of training needs for TAFE staff associated with industry/TAFE co-operative arrangements. Most importantly in the ability to identify and meet the client's requirements. There is room here for the development of flair in presenting educational concepts (goal visions) in an imaginative fashion. High-level negotiation skills are essential.

TAFE staff involved closely with co-operative arrangements also need skills order to function effectively in a 'Change Agent' role within a firm. This ability places a high premium on sensitivity to client concerns and organisational culture. Training is needed in program planning and project management including, where appropriate, an understanding of legal issues such as those associated with copyright matters.

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APPENDIX A: TAFE/INDUSTRY LIAISON STUDY - QUESTIONNAIRE

1. **Project initiation stage.**

I would like to get an understanding of the important events in setting up the project and what we can learn from that.

Where would you like to begin? (LET RESPONDENT LEAD)

PROBES:

How did the project get started?
What was the general context or situation which led up to it?
Were there any competitors?
Had you or the college dealt with the industry partner previously?
Who initiated the discussions?
What were the key steps or processes in setting up the venture?
What major client need was to be met?
Did the client's needs change during the set-up stage?

What were the aims and objectives? (Or intended outcomes?)

Was speed of response to the client an issue?

During the set-up stage were there any particular factors or barriers which posed problems to be overcome or circumvented?

PROBLEM AREAS?
Consultancy process issues?
Contractual issues ... were there any difficulties drawing up the contract?
Issues associated with client liaison?
Team building issues?
Staffing?

Were these factors internal to the College or external? PROBE ...

Who were the major players during the set-up stage and who was in charge?

What expertise was needed (expert consultancy?)

What was the level of expertise needed for successful project completion? (E.g., high, medium ...?)

2. **Project administration and budget**

What was the budget?

What was the timeframe for the project?

What was the contribution of each partner

- financial,
- personnel,
- equipment,
- materials,
- facilities.

Were the resources needed adequate?

What was the staffing?

Were accreditation issues important?

Did the contract specify the transfer of knowledge or of technology?

What lessons were learned about setting up projects like this?

Is there anything else which we have not touched on which would help me to better understand the project set-up phase?

PROBE: It has been said that the skill of setting up a complex project, is to anticipate and work around problems which might arise? Was that the case here?

3. **Project implementation phase**

In general, what inputs and resources were needed?

- inputs/resources
- design
- implementation
- results known
- options for change
- problems generating the program
- how program aimed to address problem

Who were the major players during implementation and who was in charge?

How was the project management handled?

PROBE:- day to day management
- overall management
- timing of management meetings

How was the evaluation of the project handled
- during implementation?

- at completion?

How financially viable is the venture for TAFE?
PROBE: Are costs to TAFE fully accounted?
What forms have subsidisation taken, for example, was management time costed during negotiation phase).

Structural factors

- availability of staff to do the set up work?
- suitability of staff who are available for this?
- speed of the set up (presume this must be quick)
- ability to hire staff at a high enough level to staff the project

The financial viability of each venture for TAFE, e.g., are costs to TAFE fully accounted; what forms have subsidisation taken (e.g., management time not costed during negotiation phase). Robin Shreeve suggests that Victoria, SA and ACT would claim cost recovery for all activities, but in reality no accurate model has been developed.

4. **Current status**

What is the current position with the project? (PROBE AS REQUIRED)

Looking back on the aims and objectives for the project ..

- were there any problems in how they were developed
- any problems with their scope (too broad - too narrow)?

Was the budget under or over spent?

5. **Concluding phase of interview**

Were any significant problems experienced during the main stages of the project's development and what were they? e.g., during:

(1) setup stage
(3) early implementation stage
(4) late implementation stage
(4) completion?

How were the problems overcome?

What (if any) additional support/assistance would you have liked from TAFE during the whole process?

What (if any) additional support/assistance would you have liked from industry during the whole process?

Were there additional skills/knowledge you would have liked yourself to assist you in your role?

What has the industry partner gained from the liaison?

What has TAFE gained from the liaison?

In light of the original objectives for the venture, do you consider the project to have fulfilled all expectations of TAFE and industry to date?

What have been the outcomes so far - expected and unexpected?

From the benefits of hindsight, what do you consider are the key factors for industry/TAFE liaison to be successful, when:

(1) setting up a co-operative venture
(2) operating a venture

What factors would have led to failure?

What factors are necessary to maintain successful links?

Was the project done to deadline? (Or is it on track?).

Which partner do you think has benefited the most from knowledge gained during the development of the project, TAFE or Industry?

It has been said that industry people are generally better at extracting a good financial deal from TAFE than the other way around. Can you comment on this?

To make this kind of venture successful what skills are essential in those who set them up, or implement them?

PROBE issue of need for negotiation and costing skills in TAFE.

Have the original objectives of the project been reached at this stage?

PROBE:
Effectiveness versus efficiency issue
Potential and visibility of the project
Impact on participants:
- increased knowledge
- new skills, cross-skilling
- positive attitudes
- importance of further education

Impact on the organisation or industry
Sustainability of the venture